

MODEL 236 CURRENT SENSITIVE RELAY

PART NUMBER 12M03-00116-01

APPLICATION NOTES

1. The Current Sensitive Relay is normally used to detect a specific signal level. The relay is biased to one state (either on or off) by a fixed or adjustable bias current which may be obtained from one of the regulated internal 6 volt supplies (positive-terminal 5, negative-terminal 7).

A second current proportional to the measured variable and opposite in polarity is also applied to the relay input. When its value exceeds the bias, the relay changes state. Bias and signal levels of at least several hundred micro-amperes insure accurate switching points.

2. General Op-amp theory and application applies to the amplifier within the limits of accuracy and gain. For further information refer to any Op-amp "Cookbook".

For a complete treatment of the subject refer to the Burr Brown Electronic Series, published by McGraw Hill:

- Operational Amplifiers - Design and Applications
- Application of Op-amps
- Designing with Op-amps
- Function Circuits-Design and Applications

3. The amplifier will algebraically add multiple current inputs at terminal 4 and respond to the net sum.
4. A capacitor connected between terminals 4 and 6 (integrator) will cause a time delay before the relay is picked up or dropped out. The amount of time will depend on the value of the capacitor and magnitude of the net input signal.

The time delay for net input currents of less than 25uA can be approximated as follows:

Approximate time for pick-up:

$$t = \frac{0.7 \times C}{i}$$

Approximate time for dropout:

$$t = \frac{7.0 \times C}{i}$$

Where: t is in seconds

C is in microfarads

i is net input current in microamperes

5. Bridge Unbalance Detector. The CSR can act as a sensitive galvanometer to detect the direction of unbalance in a DC bridge circuit. When used in this manner sufficient resistance must either be inherent in the bridge or added to the relay input to limit signal current to a few milliamperes with full bridge unbalance.



GEMINI CONTROLS LLC
W61 N14280 TAUNTON AVE.
PO BOX 380
CEDARBURG, WI 53012
www.geminicontrols.com

PHONE: (262)-377-8585
FAX: (262)-377-4920
email: sales@geminicontrols.com